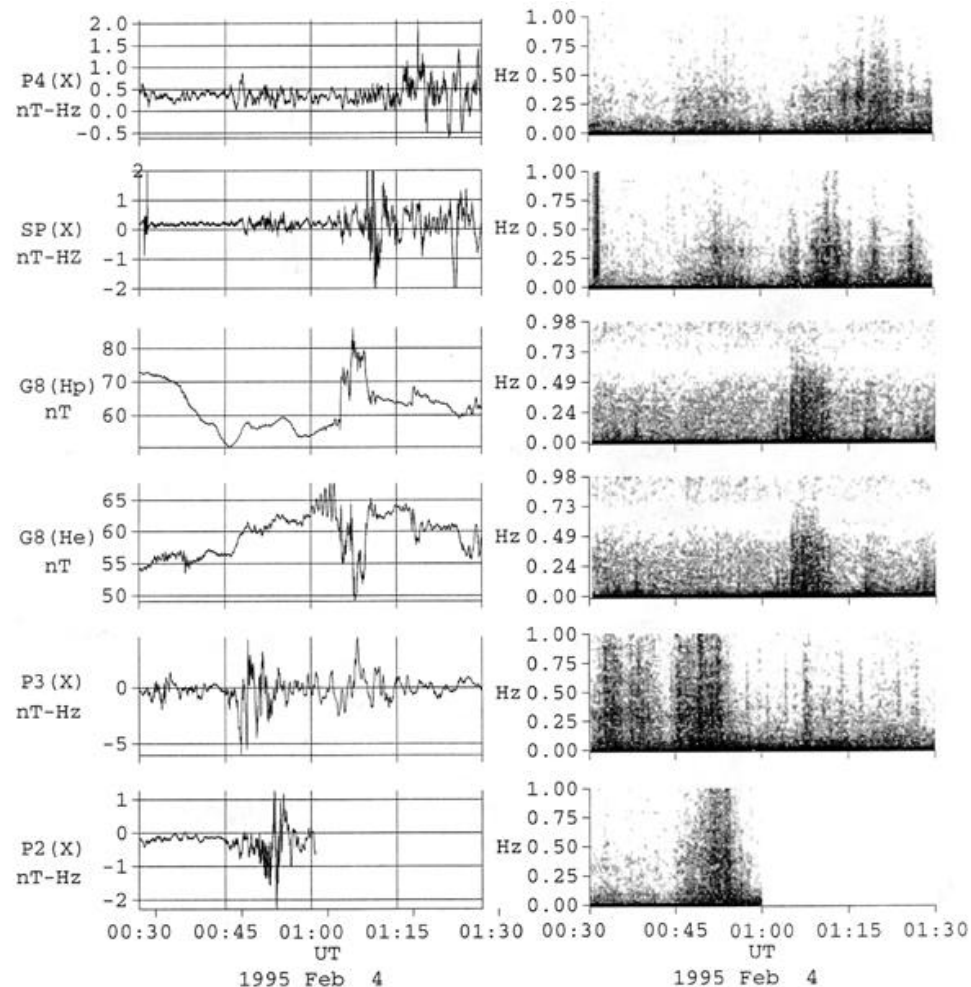


Magnetic Pulsations in Space and on the Ground



GOES Satellite / Ground Comparisons

Pi1 are irregular magnetic pulsations in the period range of 1-40 s which can appear as bursty broadband signals or as continuous narrowband signals. They have long been associated with auroral electron precipitation and are generally believed to be the ground signature of overhead ionospheric currents created by enhanced conductivity due to the precipitation. A high geomagnetic latitude investigation of Pi1 waves using AGO-P1, AP2, AP3, AP4, the British AGO A81, and induction magnetometers at SPA, STF, and IQA was just completed. The objective was to determine the time development of the ground Pi1B in the region where auroras rapidly move poleward during the expansive phase of substorms. Line plots and spectrograms of the ground pulsation data for one example are shown. An important component of the investigation was to look at simultaneous GOES magnetometer data from the equatorial plane within a few tens of degrees longitude of the ground sites. For further details see: Arnoldy et al., *Pi1 Magnetic Pulsations in Space and at High Latitudes on the Ground*, 103, 23,581 (1998).